

**IN THE CLAIMS**

Please amend the claims as follows:

Claims 1-12 (canceled)

Claim 13 (currently amended): A hot plate unit comprising:

a supporting case having a thickness, L, of 50 mm or less and including a bottom;

a ceramic substrate fitted to said supporting case and having a surface and a thickness, l;

a resistance heating element provided on the surface of said ceramic substrate or inside said ceramic substrate; and

a coolant introducing [[pipe]] device disposed at the bottom of said supporting case,  
wherein a ratio, l/L, is in a range of about 0.02 to 0.2.

Claim 14 (previously presented): The hot plate unit according to claim 13, wherein plural openings are formed at the bottom of said supporting case.

Claims 15-16 (canceled)

Claim 17 (currently amended): The hot plate unit according to claim 13, wherein said ceramic substrate comprises at least one of a nitride ceramic, [[or]] a carbide ceramic and an oxide ceramic.

Claim 18 (previously presented): The hot plate unit according to claim 13, wherein a thermocouple is provided in said ceramic substrate.

Claim 19 (previously presented): The hot plate unit according to claim 13, wherein said ceramic substrate has a diameter of 300 mm or more.

Claim 20 (previously presented): The hot plate unit according to Claim 13, wherein said supporting case has a thickness of 25 mm or less.

Claim 21 (previously presented): The hot plate unit according to claim 13, wherein said supporting case is made of metal.

Claim 22 (previously presented): The hot plate unit according to claim 13, which is used at a temperature of 150°C or higher.

Claim 23 (new): The hot plate unit according to claim 17, wherein said nitride ceramic comprises at least one nitride selected from the group consisting of aluminum nitride, silicon nitride and boron nitride.

Claim 24 (new): The hot plate unit according to claim 17, wherein said carbide ceramic comprises at least one carbide selected from the group consisting of silicon carbide, zirconium carbide, tantalum carbide and tungsten carbide.

Claim 25 (new): The hot plate unit according to claim 17, wherein said oxide ceramic comprises at least one oxide selected from the group consisting of alumina, zirconia, cordierite, and mullite.

Claim 26 (new): The hot plate unit according to claim 13, wherein said ceramic substrate comprises at least one of a nitride ceramic and a carbide ceramic.

Claim 27 (new): The hot plate unit according to claim 13, wherein said ceramic substrate comprises aluminum nitride.

Claim 28 (new): The hot plate unit according to claim 13, further comprising an intermediate bottom plate disposed over the bottom inside the supporting case.

Claim 29 (new): The hot plate unit according to claim 28, wherein the intermediate bottom plate has a plurality of openings formed therein.

Claim 30 (new): The hot plate unit according to claim 13, wherein the bottom has a plurality of dented portions.

Claim 31 (new): The hot plate unit according to claim 13; wherein the coolant introducing device comprises at least one pipe providing an opening through the bottom and extending toward the ceramic substrate.

Claim 32 (new): The hot plate unit according to claim 28, wherein the coolant introducing device comprises at least one pipe providing an opening communicating from the bottom to the intermediate bottom plate.